

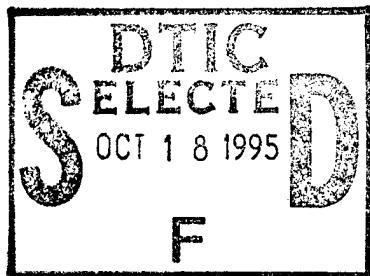
# NAVAL HEALTH RESEARCH CENTER

---

## NAVAL SPECIAL WARFARE COMPUTER-AIDED CORPSMAN

### TRAINING PROGRAM (VERSION 1.0) -

#### MULTIPLE CHOICE ITEMS



*L. A. Hermansen  
F. K. Butler  
S. D. Flinn  
L. D. Noyes*

19951017 049

*Technical Document 94-3C*

*DTIC QUALITY INSPECTED 5*

Approved for public release: distribution unlimited.



NAVAL HEALTH RESEARCH CENTER  
P. O. BOX 85122  
SAN DIEGO, CALIFORNIA 92186 - 5122

NAVAL MEDICAL RESEARCH AND DEVELOPMENT COMMAND  
BETHESDA, MARYLAND



**NAVAL SPECIAL WARFARE COMPUTER-AIDED  
CORPSMAN TRAINING PROGRAM (VERSION 1.0)-  
MULTIPLE CHOICE ITEMS**

**DIVING MEDICINE  
EXERCISE INJURIES  
CASUALTY MANAGEMENT**

**Lawrence A. Hermansen  
Naval Health Research Center, San Diego, California**

**and**

**CAPT Frank K. Butler, MC, USN  
LCDR Scott D. Flinn, MC, USN  
LCDR Lachlan D. Noyes, MC, USN**

**Naval Special Warfare Command, Coronado, San Diego, California**

Accession For	
NTIS	CRA&I <input checked="" type="checkbox"/>
DTIC	TAB <input type="checkbox"/>
Unclassified <input type="checkbox"/>	
Justification _____	
By _____	
Distribution / _____	
Availability Codes	
Dist	Avail and / or Special
A-1	

Technical Document No. 94-3C was supported by the Naval Medical Research and Development Command, Bethesda, MD, Department of the Navy, under Work Unit 60407N 407BB.001-6307. The views expressed in this article are those of the authors and do not reflect the official policy or position of the Department of the Navy, Department of Defense, or the U.S. Government. Approved for public release, distribution unlimited.

## **SUMMARY**

The Computer-Aided Corpsman Training Program (CACTP) has been developed to assess the feasibility of providing individual training for corpsmen attached to Naval Special Warfare (NSW) Commands. This document contains all of the question and answer items from the first edition of CACTP. The items were developed by U.S. Navy physicians with expertise in each of the following three subject areas: (1) Diving Medicine, (2) Exercise Injuries, and (3) Casualty Management. The questions were designed to cover major components of the subject areas described and to reflect the special knowledge required of Naval Special Warfare (NSW) corpsmen due to the unique environments in which they must operate.

## TABLE OF CONTENTS

Title Page .....	1
Summary .....	2
Table of Contents .....	3
Introduction .....	4
I. Diving Medicine Module .....	5
II. Exercise Injuries Module .....	25
III. Casualty Management Module .....	54

## INTRODUCTION

U.S. Navy corpsmen are required to maintain their skills in a wide variety of areas. This is normally accomplished through the use of group training classes. Providing group training classes for corpsmen attached to Naval Special Warfare (NSW) commands, however, poses a special problem. Typically, one corpsman is attached to each NSW unit or platoon. These platoons often train independently of each other and, therefore, it is unusual for all the corpsmen from a particular command to be available for group training at the same time. A solution to this problem is to provide medical training classes on an individual basis and without scheduling restraints. Computer-aided instruction offers an excellent method for achieving this solution since it does not require a classroom or an instructor and it can be accomplished at any time. Moreover, this approach allows material to be readily updated and expanded. The Computer-Aided Corpsman Training Program (CACTP), Version 1.0, was developed to test the feasibility of this approach.

CACTP was developed using FOXPRO, a commercially available database management system. CACTP is provided to users on a 3 1/2 inch floppy diskette and will run on any PC that has at least two megabytes of memory. The program first allows the user to pick a subject area or "module" from a menu. Then the user may choose either the "practice" or "test" mode for the session. In the "practice" mode, the user is presented one multiple choice question at a time. The user selects from a set of choices and is not allowed to continue on to the next question until the correct answer has been selected. When the correct answer has been selected, the program notifies the user and provides a reference so the user can verify the correct choice or do further research about a particular question. In the "test" mode, the questions are "shuffled" randomly during each session and presented to the user one at a time. The user is allowed only one chance to answer each question before the next question is presented. The program keeps score and, at the end of the session, the scores are presented along with the user's response to each item and whether the response was correct or incorrect. These scores, along with user-identifying information, can be printed and saved as a permanent record. CACTP has on-line "help" prompts throughout the program and also comes with a Quick Reference Guide that provides information about installation, conventions, and use.

Three subject areas; Diving Medicine, Exercise Injuries, and Casualty Management have been included in the initial version of CACTP. U.S. Navy doctors with special interests and knowledge in a particular subject area were selected and asked to provide approximately 100 multiple choice items for CACTP. They were instructed to create question and answer items that were relevant to NSW corpsmen and the unique environments in which they must operate. This document is a compilation of the questions, answers, and references for Version 1.0 of CACTP. The modules were authored by CAPT Frank K. Butler, MC, USN; LCDR Scott Flinn, MC, USN; and LCDR L.D. Noyes, MC, USN respectively.

**I. DIVING MEDICINE MODULE**  
**by**  
**FRANK K. BUTLER**  
**CAPT, MC, USN**

1. A repetitive dive is defined a second dive occurring within how many hours of a previous dive?
  - a. Six hours
  - b. Twelve hours
  - c. Twenty-four hours
  - d. Forty-eight hours

b. (U.S. Navy Diving Manual, Chapter 7, page 12)
2. Which of the following is true concerning exceptional exposure dives?
  - a. The Commanding Officer may personally authorize an exceptional exposure dive.
  - b. The diver should be treated for an omitted decompression following an exceptional exposure dive even if he has followed all of the prescribed decompression stops.
  - c. A slower ascent rate is required with exceptional exposure dives.
  - d. Repetitive dives are not permitted following an exceptional exposure dive.

d. (U.S. Navy Diving Manual, Chapter 7, page 12)
3. All air decompression tables found in Chapter 7 of the Navy Diving Manual may be used in fresh water up to an altitude of:
  - a. 1500 ft
  - b. 1700 ft
  - c. 2000 ft
  - d. 2300 ft

d. (U.S. Navy Diving Manual, Chapter 7, page 35)

4. Permission for air dives above 2300 ft in altitude must be obtained from:

- a. The Commanding Officer
- b. NAVSEA OOC
- c. CNO
- d. None of the above

b. (U.S. Navy Diving Manual, Chapter 7, page 35)

5. Divers surfacing from an air dive may immediately fly up to what altitude?

- a. 1500 ft
- b. 1700 ft
- c. 2000 ft
- d. 2300 ft

d. (U.S. Navy Diving Manual, Chapter 7, page 35)

6. Divers surfacing from a no decompression air dive who will be flying in an aircraft pressurized to approximately 8000 ft (standard for commercial aircraft) may fly after how many hours?

- a. 2 hours
- b. 6 hours
- c. 12 hours
- d. 24 hours

a. (U.S. Navy Diving Manual Chapter 7, page 35)

7. Divers surfacing from a decompression air dive who will be flying in an aircraft pressurized to 8000 ft may fly after how many hours?

- a. 2 hours
- b. 6 hours
- c. 12 hours
- d. 24 hours

c. (U.S. Navy Diving Manual, Chapter 7, page 35)

8. Divers surfacing from a dive during which only the Draeger Lar V was used may fly after how many hours?

- a. 2 hours
- b. 6 hours
- c. 12 hours
- d. no wait is necessary

d. (U.S. Navy Diving Manual, Chapter 14, page 8)

9. The first symptom of hypoxia is usually:

- a. shortness of breath
- b. headache
- c. cyanosis
- d. unconsciousness

d. (U.S. Navy Diving Manual, Chapter 8, page 3)

10. Which of the following may cause carbon dioxide buildup in a closed circuit underwater breathing apparatus?

- a. canister leak
- b. exceeding the prescribed canister duration
- c. excessive exercise rate
- d. a defective non-return valve in the mouthpiece
- e. all of the above

e. (U.S. Navy Diving Manual, Chapter 8, page 4)

11. Which of the following is not a sign or symptom of carbon dioxide buildup?

- a. increased rate and depth of breathing
- b. localized weakness
- c. headache
- d. unconsciousness

b. (U.S. Navy Diving Manual, Chapter 14, page 30)

12. Central nervous system oxygen toxicity is usually not seen at partial pressures of oxygen below:

- a. 1.6 atmospheres absolute
- b. 1.8 atmospheres absolute
- c. 2.0 atmospheres absolute
- d. 2.2 atmospheres absolute

a. (U.S. Navy Diving Manual, Chapter 8, page 4)

13. Which of the following is a sign or symptom of central nervous system oxygen toxicity?

- a. muscle twitching
- b. tinnitus
- c. visual disturbances
- d. convulsion
- e. all of the above

e. (U.S. Navy Diving Manual, Chapter 8, page 4)

14. A diver experiences difficulty clearing his ears on descent at a depth of 15 fsw. Which of the following is the most appropriate action?

- a. Increase the intensity of the Valsalva maneuver.
- b. Descend a few more feet and try again to clear the ears.
- c. Ascend a few feet and try again to clear the ears.
- d. None of the above

c. (U.S. Navy Diving Manual, Chapter 8, page 6)

15. A diver experiences severe ear pain on descent followed by sudden relief of pain and vertigo. Upon surfacing, he notes decreased hearing in the affected ear. The most likely diagnosis is:

- a. simple ear squeeze
- b. middle ear oxygen absorption syndrome
- c. ruptured ear drum
- d. none of the above

c. (U.S. Navy Diving Manual, Chapter 8, page 7)

16. Treatment of near drowning includes all of the following except:

- hospitalization of all cases regardless of the severity of symptoms
- administration of 100% oxygen if any respiratory signs or symptoms persist after recovery from the water
- keep the patient warm and rested
- administer large volumes of IV fluid to prevent shock

d. (U.S. Navy Diving Manual, Chapter 8, page 10)

17. Treatment of seriously hypothermic patients includes which of the following?

- active rewarming
- maintaining the patient in a horizontal position while transporting to a medical facility
- monitor for cardiac arrhythmias
- all of the above

d. (U.S. Navy Diving Manual, Chapter 8, page 12)

18. The best method for actively rewarming a hypothermia victim is:

- warm IV fluids
- heating blanket
- warm water immersion
- chemical hot packs

c. (U.S. Navy Diving Manual, Chapter 8, page 12)

19. If a caustic solution enters the mouth or nose of a diver using a closed circuit underwater breathing apparatus he should immediately:

- Assume an upright position in the water, activate his manual bypass, and return to the surface.
- Activate his life jacket.
- Maintain a horizontal position in the water until his problem is solved.
- none of the above

a. (U.S. Navy Diving Manual, Chapter 8, page 15)

20. Prevention of otitis externa during diving operations is best accomplished by using which of the following solutions twice a day and after each dive?

- a. tobramycin 0.3 % drops
- b. gentamycin 0.3% drops
- c. prednisolone acetate 1% drops
- d. acetic acid and aluminum acetate 2% drops

d. (U.S. Navy Diving Manual, Chapter 8, page 14)

21. The only medication specifically approved by the U.S. Navy Diving Manual for prevention of sea sickness before diving operations is:

- a. Compazine
- b. Meclizine
- c. Dramamine
- d. Transdermal Scopolamine

d. (U.S. Navy Diving Manual, Chapter 8, page 16)

22. Transdermal Scopolamine should be used before diving operations only if:

- a. The dive is shallower than 60 fsw.
- b. The dive will be of less than 60 minutes duration.
- c. The diver has previously used this medication for at least 24 hrs with no adverse reactions.
- d. none of the above

c. (U.S. Navy Diving Manual, Chapter 8, page 16)

23. Recompression to a depth of 165 fsw is currently used under what circumstances in the treatment of arterial gas embolism?

- a. always
- b. under no circumstances
- c. only for cases in which the gas embolism occurred many hours prior to the recompression
- d. only when recompression to 60 fsw is ineffective

d. (U.S. Navy Diving Manual, Chapter 8, page 17)

24. What condition often accompanies arterial gas embolism?

- a. pneumothorax
- b. decompression sickness
- c. round window rupture
- d. caloric vertigo

a. (U.S. Navy Diving Manual, Chapter 8, page 18)

25. The usual presentation of an arterial gas embolism is:

- a. sudden loss of consciousness shortly after surfacing from a dive
- b. headache
- c. paraplegia
- d. hemiplegia
- e. extremity pain

a. (U.S. Navy Diving Manual, Chapter 8, page 18)

26. Which of the following symptoms experienced by a conscious, alert diver shortly after surfacing from a dive requires emergency recompression as treatment for arterial gas embolism without waiting for a thorough neurological exam?

- a. sensations of tingling or numbness
- b. sensation of weakness without obvious paralysis
- c. difficulty in thinking without obvious confusion
- d. none of the above

d. (U.S. Navy Diving Manual, Chapter 8, page 18)

27. Treatment of mediastinal or subcutaneous emphysema may include:

- a. 100% oxygen breathing on the surface
- b. shallow recompression (usually 5 or 10 ft) breathing 100% oxygen for an hour
- c. either a or b
- d. neither a nor b

c. (U.S. Navy Diving Manual, Chapter 8, page 19)

28. A diver complains of sharp chest pain and shortness of breath shortly after surfacing from a dive. The presence of audible breath sounds on both sides of his chest rules out the diagnosis of pneumothorax.

- a. true
- b. false

b. (U.S. Navy Diving Manual, Chapter 8, page 20)

29. A diver being treated at 165 fsw for arterial gas embolism exhibits marked respiratory distress during subsequent ascent to 60 fsw. The patient should be suspected of having:

- a. pulmonary decompression sickness (the chokes)
- b. mediastinal emphysema
- c. tension pneumothorax
- d. none of the above

c. (U.S. Navy Diving Manual, Chapter 8, page 20)

30. Treatment of a tension pneumothorax includes:

- a. immediate ascent to the surface
- b. insertion of a chest tube or a needle thoracentesis
- c. Decadron 10 mg IV
- d. none of the above

b. (U.S. Navy Diving Manual, Chapter 8, page 20)

31. Which of the following conditions precludes an individual from diving?

- a. history of spontaneous pneumothorax
- b. active asthma
- c. acute bronchitis
- d. all of the above

d. (U.S. Navy Diving Manual, Chapter 8, page 20)

32. The most common symptom of decompression sickness is:

- a. joint pain
- b. weakness
- c. unconsciousness
- d. parasthesias
- e. none of the above

a. (U.S. Navy Diving Manual, Chapter 8, page 22)

33. Which cutaneous signs or symptoms following a dive requires recompression?

- a. cutis marmorata (bluish discoloration of the skin)
- b. itching
- c. faint reddish skin rash
- d. all of the above

a. (U.S. Navy Diving Manual, Chapter 8, page 23)

34. Symptoms which begin more than how many hours after a dive are probably not caused by decompression sickness?

- a. 6 hours
- b. 12 hours
- c. 24 hours
- d. 48 hours

d. (U.S. Navy Diving Manual, Chapter 8, page 24)

35. A student aviator develops knee pain during an altitude chamber run. The pain resolves completely upon return to sea level. Neurological exam is completely normal. Recompression is unnecessary if the patient remains symptom free during a two hour observation period.

- a. true
- b. false

a. (U.S. Navy Diving Manual, Chapter 8, page 25)

36. Category A decompression sickness patients with severe signs or symptoms which involve the inner ear, cardiorespiratory system, or central nervous system should be re-compressed as soon as possible even if a full chamber watch section is not present.

- a. true
- b. false

a. (U.S. Navy Diving Manual, Chapter 8, page 25)

37. Which of the following is not true about category B decompression sickness?

- a. the only severe symptom is pain
- b. symptoms are static or slowly progressive
- c. recompression therapy should be instituted on an emergency basis even if some normal chamber preparations must be omitted
- d. all of the above

c. (U.S. Navy Diving Manual, Chapter 8, page 26)

38. A Treatment Table 6 is used for arterial gas embolism in which signs or symptoms respond to oxygen breathing at 60 fsw.

- a. true
- b. false

a. (U.S. Navy Diving Manual, Chapter 8, page 30)

39. Indications for a Treatment Table 4 include:

- a. worsening Type 2 decompression symptoms at 60 fsw
- b. unresolved arterial gas embolism symptoms after 30 minutes at 165 fsw
- c. recurrence of symptoms 60 fsw or deeper
- d. all of the above

d. (U.S. Navy Diving Manual, Chapter 8, page 30)

40. A Treatment Table 5 may be used for a pain only decompression sickness patient who has had a normal neurological exam prior to recompression and whose pain is resolved:

- a. immediately upon recompression to 165 fsw
- b. within 10 minutes of oxygen breathing at 60 fsw
- c. by the end of the first twenty minutes oxygen breathing period at 60 fsw
- d. by the end of the second 20 minutes oxygen breathing period at 60 fsw

b. (U.S. Navy Diving Manual, Chapter 8, page 30)

41. A Treatment Table 6 is not indicated in which of the following situations:

- Type I decompression sickness symptoms not resolved within ten minutes at 60 fsw or where a neurological exam was not performed prior to recompression.
- Arterial gas embolism symptoms not responding to treatment at 60 fsw.
- Type II decompression symptoms which respond to the initial 60 fsw recompression.
- None of the above

b. (U.S. Navy Diving Manual, Chapter 8, page 30)

42. Which of the following is not true about Treatment Table 6A?

- The maximum depth is 165 fsw for 30 minutes.
- No more than 20 minutes may have been spent at 60 fsw before recompression to 165 fsw.
- Three 20 minute oxygen breathing periods are spent at 60 fsw with up to three additional oxygen breathing periods if necessary.
- The tenders breath 100% oxygen for at least the last 60 minutes at 30 fsw and during ascent to the surface.
- none of the above

c. (U.S. Navy Diving Manual, Chapter 8, pages 30 and 44)

43. If more time at 60 fsw is needed after the maximum time allowed by a Treatment Table 6 or 6A, a Treatment Table 7 should be used.

- true
- false

a. (U.S. Navy Diving Manual, Chapter 8, page 30)

44. If a diver accidentally surfaces from a decompression stop at 20 fsw or shallower, feels well, and can return to his stop depth within one minute, which of the following actions should be taken?

- The diver should be treated for omitted decompression.
- The diver should return to depth and complete his normal decompression stops with the addition of one minute at his first stop.
- The 10 and 20 fsw decompression stop times should be multiplied by 1.5.
- none of the above

b. (U.S. Navy Diving Manual, Chapter 8, page 32)

45. If a diver inadvertently surfaces from a decompression stop at 20 fsw or shallower but feels well and can return to his decompression stop depth after more than one minute has passed, but before 5 minutes have passed, which of the following actions should be taken?

- a. The diver should be treated for omitted decompression.
- b. The diver may complete his normal decompression stop times plus one minute at his first stop.
- c. The 10 and 20 fsw stop times should be multiplied by 1.5.
- d. The 10 and 20 fsw stop times should be multiplied by 2.

c. (U.S. Navy Diving Manual, Chapter 8, page 32)

46. All of the following actions should be taken in transporting victims of decompression sickness or arterial gas embolism to a recompression chamber except:

- a. The patient should be kept horizontal.
- b. 100% oxygen should be given to the patient if available.
- c. Air transportation should be at an altitude of 1000 ft or less if possible.
- d. Fluids should be withheld to prevent the development of pulmonary edema.

d. (U.S. Navy Diving Manual, Chapter 8, page 35)

47. If no chamber is available, a quadriplegic decompression sickness patient should be treated with in-water recompression.

- a. true
- b. false

b. (U.S. Navy Diving Manual, Chapter 8, page 35)

48. Which of the following conditions must be met for a patient to be treated on a Treatment Table 5?

- a. The patient should have pain-only decompression sickness.
- b. A neurological exam should be completed prior to recompression and found to be normal.
- c. Pain should be resolved by 10 minutes at 60 fsw.
- d. all of the above

d. (U.S. Navy Diving Manual, Chapter 8, page 37)

49. A diver is re-compressed for knee pain the day after a dive. No relief is obtained after 20 minutes at 60 fsw. After reviewing the patient's history, the diving medical officer on the scene feels sure that the patient's pain is related to a sports injury. The Treatment Table 5 should be aborted at this point and the patient brought back to the surface.

- a. true
- b. false

b. (U.S. Navy Diving Manual, Chapter 8, page 51)

50. Treatment Table 7 is intended for the treatment of severe symptoms of decompression sickness or gas embolism which may cause marked residual impairment and should not be used for treatment of residual pain.

- a. true
- b. false

a. (U.S. Navy Diving Manual, Chapter 8, page 53)

51. The following statements are true about a Treatment Table 7:

- a. A minimum of eight 25 minute oxygen breathing periods should be administered at 60 fsw.
- b. The patient may sleep any time during the treatment except when breathing oxygen below 30 fsw.
- c. Oxygen breathing should be discontinued if the patient develops significant pain on inspiration unless the diving medical officer feels that the patient is experiencing significant benefit from continued treatment.
- d. A Treatment Table 7 should not be undertaken unless the internal chamber temperature can be maintained at 85 degrees F. or less.
- e. all of the above

e. (U.S. Navy Diving Manual, Chapter 8, page 54)

52. All of the following statements about recompression treatments are true except:

- a. A qualified inside tender should be in the chamber.
- b. If only one diving medical officer is present, he should usually remain outside the chamber with inside visits kept within no decompression limits.
- c. The patient should be kept lying down.
- d. Recompression rate is 60 ft per min.

d. (U.S. Navy Diving Manual, Chapter 8, page 55)

53. Recompression rates may be decreased as necessary to allow the patient to equalize.

- a. true
- b. false

a. (U.S. Navy Diving Manual, Chapter 8, page 55)

54. How long should a patient breath air after suffering an episode of central nervous system oxygen toxicity during a Treatment Table before he resumes oxygen breathing?

- a. 5 minutes
- b. 10 minutes
- c. 15 minutes
- d. 20 minutes

c. (U.S. Navy Diving Manual, Chapter 8, page 56)

55. The first symptom of pulmonary oxygen toxicity is usually:

- a. end inspiratory chest discomfort
- b. end expiratory chest discomfort
- c. dyspnea
- d. none of the above

a. (U.S. Navy Diving Manual, Chapter 8, page 56)

56. All of the following are true about fluid therapy during recompression treatment for decompression sickness or arterial gas embolism except:

- a. Conscious patients may receive PO fluid therapy.
- b. Unconscious patients should receive IV fluid therapy.
- c. The IV fluid rate should be 75 to 100 cc per hour.
- d. The preferred IV fluid to be administered is D5W.

d. (U.S. Navy Diving Manual, Chapter 8, page 57)

57. A patient being treated for bilateral leg weakness has not voided after eight hours on Treatment Table 7 and complains of pelvic fullness. Physical exam reveals a distended bladder. Correct therapy is:

- a. fluid restriction to prevent further bladder distention
- b. insertion of a Foley catheter
- c. Lasix 40 mg PO
- d. vigorous manual pressure on the bladder

b. (U.S. Navy Diving Manual, Chapter 8, page 57)

58. Foley catheter balloons in a recompression chamber should be filled with liquid, not air.

- a. true
- b. false

a. (U.S. Navy Diving Manual, Chapter 8, page 57)

59. Chamber oxygen levels during recompression treatments should be maintained between:

- a. 17% to 23%
- b. 18% to 24%
- c. 19% to 25%
- d. 20% to 26%

c. (U.S. Navy Diving Manual, Chapter 8, page 58)

60. The maximum carbon dioxide level allowed inside a recompression chamber during a treatment is:

- a. 0.5% surface equivalent (3.8 mm mercury)
- b. 1.0% surface equivalent (7.6 mm mercury)
- c. 1.5% surface equivalent (11.4 mm mercury)
- d. 2.0% surface equivalent (15.2 mm mercury)

c. (U.S. Navy Diving Manual, Chapter 8, page 58)

61. Inside tenders should not fasten their oxygen masks to their heads, but should hold them on their faces while breathing oxygen during a recompression treatment.

- a. true
- b. false

a. (U.S. Navy Diving Manual, Chapter 8, page 60)

62. An inside tender on a recompression treatment (Tables 5, 6, or 6A) should have a surface interval of at least how many hours before acting as an inside tender on a subsequent treatment?

- a. 12 hours
- b. 24 hours
- c. 36 hours
- d. 48 hours

a. (U.S. Navy Diving Manual, Chapter 8, page 61)

63. Patients who have been treated for Type I decompression sickness with complete resolution of all signs and symptoms should wait at least how many hours before flying?

- a. 24 hours
- b. 48 hours
- c. 72 hours
- d. 96 hours

a. (U.S. Navy Diving Manual, Chapter 8, page 62)

64. Patients who have been treated for Type II decompression sickness with complete resolution of all signs and symptoms should wait at least how many hours before flying?

- a. 24 hours
- b. 48 hours
- c. 72 hours
- d. 96 hours

b. (U.S. Navy Diving Manual, Chapter 8, page 62)

65. All of the following are true about treatment of residual Type II decompression sickness signs or symptoms except:

- a. Daily treatment on a Treatment Table 6A is the preferred treatment regimen.
- b. A recompression treatment table should not be administered for more than 5 consecutive days without a break of at least one day.
- c. Treatment may be discontinued if there is no improvement on two consecutive days of treatment.
- d. none of the above

a. (U.S. Navy Diving Manual, Chapter 8, page 63)

66. Divers treated for Type I decompression sickness on a Treatment Table 5 with complete relief of all signs and symptoms should not return to normal diving activities for how many days following surfacing from recompression therapy?

- a. 7 days
- b. 14 days
- c. 28 days
- d. none of the above

d. (U.S. Navy Diving Manual, Chapter 8, page 63)

67. A diver treated for Type I symptoms of decompression sickness which required a Treatment Table 6 who have had complete resolution of symptoms may resume normal diving activity how many days following treatment?

- a. 7 days
- b. 14 days
- c. 28 days
- d. none of the above

a. (U.S. Navy Diving Manual, Chapter 8, page 63)

68. A diver treated for Type II decompression sickness whose symptoms were confined to patchy peripheral paresthesia which resolved completely by the second oxygen breathing period at 60 fsw may resume normal diving activity after how many days?

- a. 7 days
- b. 14 days
- c. 28 days
- d. none of the above

b. (U.S. Navy Diving Manual, Chapter 8, page 63)

69. A diver treated for arterial gas embolism or Type II decompression sickness with signs and symptoms other than patchy peripheral paresthesia whose symptoms resolved completely with treatment should not resume normal diving activities for how many days following treatment?

- a. 7 days
- b. 14 days
- c. 28 days
- d. none of the above

c. (U.S. Navy Diving Manual, Chapter 8, page 63)

70. Standard recompression treatment tables may be shortened only:

- a. on Friday afternoons
- b. when required to sustain normal diving training activities
- c. if the patient and tender have read all available magazines at the recompression facility
- d. if emergency situations arise which require chamber occupants to leave the chamber early

d. (U.S. Navy Diving Manual, Chapter 8, page 64)

71. There may be no preliminary warning symptoms of central nervous system oxygen toxicity before the onset of a convulsion.

- a. true
- b. false

a. (U.S. Navy Diving Manual, Chapter 14, page 27)

72. A diver on a closed circuit oxygen swim suffers a convulsion and is brought to the surface convulsing by his dive buddy. He remains unconscious on the surface. Which of the following actions is most appropriate?

- a. Transport the victim to the nearest recompression chamber for treatment of a suspected gas embolism.
- b. Observation until the post-ictal period passes.
- c. Transport patient to the nearest hospital for an emergency neurology consult.
- d. none of the above

a. (U.S. Navy Diving Manual, Chapter 14, page 29)

73. Which of the following increases the likelihood of CNS oxygen toxicity?

- a. immersion
- b. carbon dioxide buildup
- c. high exercise rate
- d. cold stress
- e. all of the above

e. (U.S. Navy Diving Manual, Chapter 14, page 28)

74. Which of the following increases the likelihood of CNS oxygen toxicity?

- a. frequent surfacing for "peeks"
- b. purging the UBA in excess of the prescribed procedure
- c. face mask leaks
- d. "skip breathing" - reduced depth and/or frequency of breathing
- e. all of the above

e. (U.S. Navy Diving Manual, Chapter 14, pages 25 & 26)

75. A diver notes decreased hearing in both ears the morning following a closed circuit oxygen dive. The most likely diagnosis is:

- a. ear squeeze
- b. middle ear oxygen absorption syndrome
- c. round window rupture
- d. otitis externa

b. (U.S. Navy Diving Manual, Chapter 14, page 32)

76. The most appropriate therapeutic measure to decrease the pain from a sting ray envenomation is:

- a. Moisten a small amount of dip and apply it to the wound.
- b. Tylenol 650 ml PO
- c. Apply a tourniquet 6 to 12 inches above the wound.
- d. Immerse the injured extremity in hot water (up to 120 degrees F. or 50 degrees C.) for 30 - 90 min to break down the heat labile venom.

d. (U.S. Navy Diving Manual, Appendix G, page 11)

77. Appropriate treatment for a jellyfish or Man O' War envenomation may include all of the following except:

- a. Apply a dilute solution of acetic acid (vinegar) to the wound.
- b. Rub sand briskly over the wound to remove any remaining nematocysts.
- c. topical steroid preparations
- d. oral analgesic agents

b. (U.S. Navy Diving Manual, Appendix G, page 12)

78. Anaphylactic reactions may result from jellyfish stings.

- a. true
- b. false

a. (U.S. Navy Diving Manual, Appendix G, page 12)

79. Which of the following is true regarding sea snake bites?

- a. All victims should be transported immediately to a medical facility, even if their current symptoms are minimal.
- b. Respiratory arrest from generalized muscular paralysis may occur during transport.
- c. A tourniquet should not be used.
- d. All sea snake bite victims should be observed for at least 12 hours after the bite.
- e. all of the above

e. (U.S. Navy Diving Manual, Appendix G, page 17)

80. What diagnosis is suggested by the following signs and symptoms:

- nausea, vomiting, diarrhea
- circumoral paresthesia
- muscle weakness and aching
- hot/cold sensory reversal

- a. Ciguatera fish poisoning
- b. Roundworm infestation
- c. M.R.E. toxicity
- d. none of the above

a. (U.S. Navy Diving Manual, Appendix G, page 18)

**II. EXERCISE INJURIES MODULE**  
by  
**SCOTT FLINN**  
**LCDR, MC, USN**

1. Which of the following are not true about over-use injuries?
  - a. Over-use injuries result from repetitive micro-trauma that leads to inflammation and/or local tissue damage in the form of cellular and extra-cellular degeneration.
  - b. Over-use injuries may be due to biomechanical abnormalities unique to a particular athlete.
  - c. Over-use injuries may be due to extrinsic factors which include poor technique, improper equipment, and changes in the duration or frequency of activity.
  - d. By returning to activity early it is possible to avoid recurrent injury.

d. (Physician and Sports Medicine, Vol 20, No 10, pp 128-142)
2. Which is the most important in establishing the diagnosis in an over-use injury?
  - a. The history and physical
  - b. X-rays
  - c. MRI
  - d. Electromyographic studies

a. (Physician and Sports Medicine, Vol 20, No 10, pp 128-142)
3. Which of the following is not used to control inflammation in over-use injuries?
  - a. Resting the injured part
  - b. Icing the injured part as long as there is inflammation persisting there.
  - c. Employing physical therapy modalities including ultrasound and electrical stimulation.
  - d. The use of non-steroidal anti-inflammatory drugs
  - e. Injection of corticosteroids into the inflamed tendon.

e. (Physician and Sports Medicine, Vol 20, No 10, pp 128-142)

4. Which of the following is not true concerning treatment of over-use injuries?

- Rest and anti-inflammatories help treat over-use injuries.
- Flexibility exercises should be started before strengthening exercises to help speed healing.
- Isometric exercises are the appropriate early strengthening exercises to use in an over-use injury.
- When suffering an over-use injury, cardiovascular exercises should be halted until the over-use injury is treated.

d. (Physician and Sports Medicine, Vol 20, No 10, pp 128-142)

5. Which of the following is not true concerning Illio-Tibial Band Syndrome(ITBS)?

- ITBS can occur after a single excessive training session.
- Prominent femoral condyles lead to an increased risk of ITBS.
- The pain occurs when lifting the foot up while walking, marching, or running.
- Treatment for ITBS includes resting the knee, icing after activity, and stretching the illio-tibial band properly.

c. (Physician and Sports Medicine, Vol 20, No 2, pp 98-108)

6. Which of the following is not true of illial tibial band syndrome?

- Typically, patients feel pain while walking, marching, or running as the foot strikes the ground and the leg is decelerated.
- The mobile compression test is diagnostic in almost all patients and is performed by having the patient lie down, flex the knee at 90 degrees, and apply pressure to the lateral femoral epicondyle.
- The Renet test is often positive for ITBS and is accomplished by having the patient stand on the affected leg and flex the knee approximately 30 degrees.
- By taking anti-inflammatories, it is possible to relieve the pain of ITBS and continue training.

d. (Physician and Sports Medicine, Vol 20, No 2, pp 98-108)

7. Which one of the following is true of amino acid supplementation:

- Amino acid supplementation has been proven to benefit endurance of athletes or body builders who are in good health and are consuming adequate diets.
- Taking arginine and ornithine amino acids may help you to burn fat while you sleep.
- Amino acid supplementation is better for you because amino acids are pre-digested and thus immediately absorbed by the athlete's gut.
- Risks of amino acid supplementation include excessive weight gain, dehydration, gout, kidney and liver damage and loss of urinary calcium.

d. (Physician and Sports Medicine, Vol 15, No 3, pp 221-224)

8. Which of the following are not included in a differential diagnosis of shin splints?

- Stress fractures
- Jumper's syndrome, a.k.a. patellar tendinitis
- Muscle herniation
- Arterial insufficiency
- Nerve entrapment
- Compartment syndromes

b. (Physician in Sports Medicine, Vol 20;1, pp 100-114)

9. Which of the following is not true about stress fractures of the tibia?

- On exam, stress fractures of the tibia often have point tenderness as opposed to diffuse tenderness on the shaft of the tibia.
- X-rays are often positive early in the course of stress fractures.
- Bone scans are useful methods of determining the diagnosis of stress fractures.
- Stress fractures present no danger for long term disability if treated appropriately.

b. (Physician in Sports Medicine, Vol 20;1, pp 100-114)

10. Chronic compartment syndrome is often characterized by all of the following except:

- Athletes will have pain when they run a certain distance, speed, or duration.
- A few minutes or several hours of rest will usually alleviate the discomfort.
- The pain is usually characterized as aching, cramping, or stabbing.
- Both legs are never involved.

d. (Physician in Sports Medicine, Vol 20;1, pp 100-114)

11. Excess dietary protein has been shown repeatedly to not increase the growth of muscle mass and may actually be harmful to the body, especially the liver and kidneys. What is the recommended dietary amount of protein an active young athlete training for endurance events should consume?

- 5 grams of protein per kilogram
- 10 grams of protein per kilogram
- 1.2 grams of protein per kilogram
- 12 grams of protein per kilogram

Note: The average American male weighs approximately 70 kilograms and one pound is equal to about 450 grams,

c. (Physician in Sports Medicine, Vol 15;12, pp 181-183)

12. Ways to prevent friction blisters on the feet include all of the following except:

- Proper shoe selection and gradual breaking in of the shoe
- Wearing either two or three pairs of socks or special double layered socks.
- Using padded insoles.
- Nightly application of drysole which is 20% aluminum chloride texahydratye.
- Applying tincture of benzoin or alum powder to help toughen the skin.
- Wearing the same socks, even when soaked.

f. (Physician in Sports Medicine, Vol 20;1, pp 116-124)

13. When treating blisters of the foot, all of the following are accepted methods of treatment except for:

- Repeatedly poking the blisters with a safety pin or a straight pin in order to unroof them.
- Leaving the roof on an un torn blister and draining the fluid steriley within 24 to 36 hours of blister formation.
- Using ring-shaped felt pads to protect small blisters.
- Removing the roof of an already torn blister and treating it with hydrogen peroxide or soapy water and then bandaging.

a. (Physician in Sports Medicine, Vol 20;1, pp 116-124)

14. Genetic endowment and proper training are the major factors contributing to success in endurance and ultra-endurance events.

- True
- False

a. (Medicine and Science in Sports and Exercise(MSSE), Vol 24;9, Sup, 344-348)

15. By eating a well-balanced diet, one consumes the recommended daily allowance of vitamins and minerals. However, many people consume multiple vitamins in an effort to enhance physical performance. Numerous studies have shown which of the following to be true:

- Chronic vitamin supplementation with a high potency multi-vitamin increased maximal aerobic capacity.
- Chronic supplementation with a multi-vitamin mineral was able to increase endurance running.
- High potency multi-vitamin mineral supplementation was able to increase hypokinetic muscle endurance and strength.
- Ingestion of large doses of certain vitamins can cause toxic effects.

d. (MSSE, Vol 24;6, pp 726-732)

16. Adequate hydration during prolonged exercise is important because it helps to prevent all of the following except:

- hyperthermia
- hypoglycemia
- reduced endurance performance
- hypotension

b. (MSSE, Vol 24;6, 671)

17. Which of the following is true concerning hydration during endurance activity?

- Hydration with water alone will definitely cause hyponatremia.
- Hydration with carbohydrate in an electrolyte containing solution will definitely enhance performance.
- Hydrating with high concentration carbohydrate electrolyte solutions such as those available in commercially prepared beverages definitely causes decreased gastric emptying.
- Currently, the best recommendation is to have adequate hydration with water or carbohydrate or carbohydrate in electrolyte containing solutions in amounts adequate to prevent dehydration and heat injuries.
- Hydrating ad libitum or when thirst is sufficient to prevent against dehydration.

d. (Various references)

18. During training for a competition in endurance exercise training both liver and muscle glycogen stores are depleted. Which of the following is not true concerning replenishment of muscle glycogen stores following endurance activities:

- Replenishment of liver and muscle glycogen stores normally takes 48 to 72 hours.
- By replenishing muscle glycogen stores, proper muscle function is guaranteed.
- In order to store muscle glycogen quickly, carbohydrates should be consumed immediately after exercise and at frequent intervals thereafter.
- Consuming 8 to 10 grams of carbohydrates per kilogram of body weight enables one to replenish muscle glycogen stores within 24 hours.

b. (MSSE, Vol 24;9, pp 336-339)

19. Which of the following physiological variables are not important for an endurance athlete's performance?

- lactate threshold
- economy of motion
- flexibility
- maximal aerobic power

c. (MSSE, Vol 24, 340-343)

20. The proper amount of carbohydrate to be consumed while training for endurance events in terms of percent of diet is:

- 70%
- 40%
- 20%
- 90%

a. (MSSE, Vol 24, 340-343)

21. Successful endurance training programs include all of the following except:

- long duration moderate intensity training
- moderate duration high intensity training
- long duration low intensity training
- short duration very high intensity training

c. (MSSE, Vol 24, 340-343)

22. Which of the following is true of long duration moderate intensity training which is used to train for endurance events?

- The intensity should be approximately 30 percent of the Vo<sub>2</sub> max.
- The duration of the sessions should last up to but not over 20 minutes.
- The benefit of long duration moderate intensity training includes an increased rate of fat metabolism.
- Long duration moderate intensity training decreases the tolerance of skeletal muscle to heat stress.

c. (MSSE, Vol 24, 340-343)

23. Which of the following is not true about moderate duration high intensity training?

- Moderate duration high intensity training improves motion economy.
- The pace of the exercise approaches that of the lactate threshold and thus may increase the lactate threshold in a particular athlete.
- Moderate duration high intensity training involves high intensity long bouts of exercise lasting between 4 and 10 minutes and is often called aerobic interval training.

a. (MSSE, Vol 24, 340-343)

24. The following is true of short duration very high intensity training except for:

- Short duration very high intensity training is interval training that corresponds to levels above the Vo<sub>2</sub> max.
- The duration of each part of exercise must be short (between 30 seconds and 3 minutes) because of the rapid accumulation of lactate.
- Recovery between these bouts should be between 5 to 10 minutes.
- The major benefit of high intensity interval training is that it allows performance of a large volume of exercise at a high intensity that could not be sustained for a prolonged period.

c. (MSSE, Vol 24, 340-343)

25. The most important risk factor for incurring an overuse injury is training errors. Which of the following are not associated with over-use injuries?

- Running on flat even surfaces
- Improper footwear
- Sudden change in training distance or intensity
- Too much hard interval training
- Excessive mileage

a. (MSSE, Vol 24;9, 360-363)

26. Which joint is the most frequent site of injury in runners with regards to over-use injuries?

- a. ankle
- b. hip
- c. knee
- d. metatarsal

c. (MSSE, Vol 24;9, 360-363)

27. Which one of the following is the least common overuse injury in endurance athletes?

- a. tendinitis
- b. tendon rupture
- c. muscle strain
- d. stress fracture

b. (MSSE, Vol 24;9, 360-363)

28. Signs and symptoms of the over-training syndrome include all of the following except:

- a. rapid recovery from muscle soreness following training
- b. longer recovery periods
- c. decreased performance despite increased work
- d. increased incidence of infections, colds, and other illnesses
- e. no desire to train

a. (Running and Fitness, June 1993, Vol 11;6)

29. Appropriate treatment for over-training syndrome include:

- a. training harder
- b. high doses of vitamin C
- c. anti-depressants
- d. steroids
- e. rest

e. (Running and Fitness, June 1993, Vol 11;6)

30. Proper treatment for patellar tendinitis also known as jumper's knee includes all of the following except:

- approximately three to four weeks of relative rest
- stretching exercises including calf stretches and quad stretches
- full squats
- ice and anti-inflammatories

c. (Physician in Sports Medicine, Vol 20;8, pp 149-150)

31. All of the following are true regarding quadriceps contusions except for:

- One of the mildest complications is myositis ossificans.
- Preserving 120 degrees flexion by using a figure eight ace wrap on the flexed knee may help to return the patient to activity much faster.
- Muscle stimulation and stretching can help to return the athlete to activity more quickly.
- Anti-inflammatories may help prevent myositis ossificans from quadriceps contusions.

a. (Scott Flinn, LCDR, MC, USN)

32. The following is true concerning breathing during exercise except for:

- Establishing a comfortable rhythm during breathing often helps performance.
- A stitch that develops in the lower chest cavity is due to pancreatic inflammation during breathing.
- To ease the pain of a stitch exhaling through pursed lips often helps.
- Breathing through the nose helps to humidify and warm the air before it reaches the lungs.

b. (Physician in Sports Medicine, Vol 20;9, pp 201-202)

33. All of the following are true of achilles tendon rupture except for:

- It usually occurs with an explosive jump or move that forces the ankle into plantar flexion.
- It is the most common tendon rupture in the lower extremity.
- Often there are no warning signs before there is an achilles tendon rupture.
- The most reliable test for an achilles tendon rupture is the Thompson test where the patient kneels on an examining table with the feet extended over the table's edge and the care giver squeezes the calf just below its widest point. The foot should plantar flex.
- Surgery is always needed to treat an achilles tendon rupture.

e. (Physician in Sports Medicine (PSM), Vol 20;9, pp 189-200)

34. All of the following is true of achilles tendinitis except for:

- Mild tendinitis usually responds to rest, anti-inflammatories, ice, and stretching.
- Chronic achilles tendinitis often requires complete rest for three to six weeks in addition to other conservative measures.
- Chronic tendinitis that does not respond to conservative treatment sometimes requires surgical correction.
- The achilles tendon can be injected safely with corticosteroids to relieve achilles tendinitis symptoms.

d. (PSM, Vol 19;8, pp 87-92)

35. Which of the following supplements have been proven to be beneficial in enhancing athletic performance?

- chromium
- gamma oryzanol(rice bran oil)
- inosine
- amino acid supplements
- none of the above

e. (PSM, Vol 20;3, pp 189-198)

36. Which of the following is not true concerning fat intake in the training diet?

- Dietary fat is necessary to provide essential fatty acids.
- Fat is a good food to eat just prior to working out due to the quick gastric emptying it induces.
- Fat is necessary to provide highly concentrated energy.
- Fat intake is necessary to absorb fat soluble vitamins.

b. (PSM, Vol 20;3, pp 87-104)

37. All of the following are true concerning dietary intake when training for endurance events except for which of the following:

- The total amount of calories per day should be 3,000 to 4,000 calories or roughly 50 kilocals per kilogram for men.
- Carbohydrate is the fuel of choice and should comprise around 70 percent of total daily calories.
- By ingesting large amounts of protein, one is able to increase lean muscle mass.
- Protein intake should be roughly 1.2 grams of protein per kilogram or 15 to 20 percent of intake.
- Fat should be approximately 20 percent of the diet.

c. (PSM, Vol 20;3, pp 87-104)

38. Which of the following is true concerning vitamin and mineral supplementation for athletes in training for endurance events?

- There is conclusive evidence that vitamin supplementation will enhance performance.
- Athletes who follow vegetarian diets may need to consider taking a multi-vitamin mineral supplement to meet dietary needs.
- By eating a well-balanced diet and consuming the 3,000 to 4,000 calories recommended, many of the vitamins and minerals necessary for training are not provided in this diet but rather need to be supplemented through additional vitamin intake.

b. (PSM, Vol 20;3, pp 87-104)

39. All of the following (concerning liquid replenishment during endurance activities) are true except for:

- Glucose electrolyte solutions can enhance fluid absorption from the small intestine.
- Glucose in electrolyte solutions have been definitively proven to be vastly superior to water alone during endurance events in terms of performance and prevention of hyponatremia.
- Carbohydrate solutions of 6-8% which are found in most commercial beverages are usually easily absorbed and tolerated.
- Carbonated beverages contain much fructose, produce slow rates of absorption, and cause G.I. distress.

b. (PSM, Vol 20;3, pp 87-104)

40. All of the following are true concerning carbohydrate consumption following endurance events except for:

- Within 15-30 minutes after an exhaustive workout or event athletes should consume carbohydrates of approximately 3 grams per kilogram every two hours for at least six hours providing 600-700 calories of carbohydrates.
- Intake of a high carbohydrate meal following exercise facilitates muscle glycogen resynthesis.
- High fiber food is useful in the post exercise meal because it speeds gastric emptying and allows the carbohydrate to be absorbed more quickly.
- Many sweet desserts have good mixes of complex and simple carbohydrates but may have 45% of fat which slows gastric emptying and therefore are not optimal.

c. (PSM, Vol 20;3, pp 87-104)

41. Which of the following is true concerning amino acid supplementation?

- Buying amino acid supplements essentially eliminates the need for you to chew, swallow, and digest normal dietary protein.
- Amino acid supplements contain amino acid which are not available from the average diet.
- Amino acid supplementations have been proven to increase lean body muscle mass.

a. (Journal Of the American Medical Association (JAMA), Vol 268;8, pp 1008-1011)

42. Proper nutrition which consists mostly of adequate carbohydrate and fluid prior to and during events is also critical. Enhancement aids, known as ergogenics are often used in an attempt to gain an edge. Which of the following has shown to be an effective ergogenic or enhancement aid?

- bee pollen
- l-creatine
- loss of excess body fat
- inosine
- amino acid supplementation
- vitamin E

c. (Medicine and Science in Sports and Exercise(MSSE), Vol 24;9, Sup 344-348)

43. All of the following are true about shoulder dislocations except for:

- Pendulum exercises are the last set of exercises performed when rehabilitating a dislocated shoulder.
- The shoulder is the most commonly dislocated joint in the body.
- Most shoulder dislocations are anterior.
- Recurrence of shoulder dislocation is related to the mechanism of injury, the patient's age, and activity level.

a. (Journal of Family Practice (JFP), Vol 35;5, pp 567-576)

44. Which one of the following are true concerning the Jone's fracture:

- A Jone's fracture is a fracture of the fifth metatarsal at the junction of the proximal shaft and the metaphysis.
- Conservative treatment consisting of ice and ace wrap are all that are necessary for treatment of this fracture.
- There are no long term sequelae from inappropriate treatment of the Jone's fracture.

a. (PSM, Vol 20;6, pp 101-110)

45. Which of the following are not important contributing factors in the development of stress fractures?

- Fatigued muscle
- Altered gait
- Abnormal loading
- Lack of cushioned insoles

d. (Athletic Training and Sports Medicine(ATSM), 2nd Edition, 1991, pg 92)

46. Which of the following are responsible for an acute inflammatory condition not healing and progressing to a chronic inflammatory response?

- Continued abusive load to the damaged tissue.
- Supplying adequate nutrition to the involved tissue.
- Allowing adequate oxygen to get to the injured tissue.
- Providing optimal load to allow regeneration response in the injured tissue.

a. (ATSM, pg 104)

47. Which of the following are not inflammation modifiers?

- Non-steroidal anti-inflammatory drugs
- Ice
- Ultrasound
- Repeated stretching
- Galvanic stimulation

d. (ATSM, pg 112)

48. The horizontal plane divides the body into which halves?

- a. Front and back
- b. Right and left
- c. Up and down
- d. Anterior and posterior

b. (ATSM, pg 125)

49. Which of the following describes a point furthest from the midline?

- a. Superior
- b. Inferior
- c. Distal
- d. Proximal

c. (ATSM, pg 126)

50. Which of the following describes closest to the midline?

- a. Medial
- b. Distal
- c. Superior
- d. Lateral

a. (ATSM, pg 126)

51. Which of the following are regions on the spine?

- a. Trichoid
- b. Carotid
- c. Cricothyroid
- d. Coccygeal

d. (ATSM, pg 129)

52. The patella or kneecap is located in the muscle tendon unit of which muscle group?

- Biceps femoris
- Quadriceps femoris
- Gastrocnemius
- Soleus

b. (ATSM, pg 137)

53. Where is the deltoid ligament located in the ankle?

- Around the medial malleolus
- Lateral malleolus
- Anterior tibial area
- Achilles

a. (ATSM, pg 138)

54. Which of the following landmarks on the elbow correlates with a tennis elbow injury?

- The lateral femoral condyle
- The medial femoral condyle
- The olecranon process
- The biceps tendon

a. (ATSM, pg 140)

55. Which motion of the shoulder is most usually painful following shoulder dislocation anteriorly and is called the apprehension sign?

- Abduction
- Adduction
- Internal rotation
- External rotation

d. (ATSM, pg 151)

56. Which of the following are not one of the four psychological phases an injured athlete goes through following injury?

- Anger phase
- Psychotic phase
- Denial phase
- Depression phase
- Acceptance phase

b. (ATSM, pg 155)

57. Which of the following are not part of the psychology of enhancing rehabilitation?

- Criticizing a person's character while rehabilitating injury.
- Setting attainable goals.
- Maintaining association with the team.
- Encouraging participation in the rehab program.

a. (ATSM, pg 177)

58. Which of the following is not a categorization of problem athletes in rehabilitation from injury?

- Cognitive athletes
- Childlike athletes
- Angry athletes
- Unmotivated athletes
- Dependent, attention loving athletes

a. (ATSM, pg 183)

59. Which of the following is not a sign consistent with a stress fracture of the tibia?

- Apprehension sign
- Cortical thickening on x-ray
- Point tenderness
- Bone scan showing four plus local uptake at the region of pain

a. (Anecdotal data from NAVSPECWAR Center)

60. Which of the following has been shown to speed healing of a small laceration?

- Antibiotic ointment
- Leaving the area open for a scab to form
- Putting a band-aid on it
- Daily scrubbing with soap and water

c. (Audio Digest Family Practice, June 1993)

61. Which of the following is not to be used in the management of muscle strains?

- Placing ice over areas where there are subcutaneous nerves.
- Resting the injury.
- Placing crushed ice in a plastic bag to the injured area for 20 to 30 minutes providing care is taken to avoid cold injury.
- Acutely splinting an injury if the strain is too painful for normal functioning.

a. (ATSM, pg 210)

62. What grade is a ligament injury which results in partial tearing and laxity of a joint?

- Grade 1 or mild ligament damage
- Grade 2 or moderate ligament damage
- Grade 3 or severe ligament damage

b. (ATSM, pg 211)

63. Which of the following is true concerning a third degree ankle inversion sprain?

- It always requires surgical intervention.
- It always requires casting.
- Rest, ice, and anti-inflammatories and early rehabilitation speed healing.

c. (ATSM, pg 211)

64. What is the correct medical term for a fracture in which the overlying skin has been lacerated?

- Pathological
- Comminuted
- Green stick
- Open

d. (ATSM, pg 214)

65. Which of the following is not a rule that should be followed when splinting a fracture?

- Always straighten a deformed limb before splinting.
- When splinting, make sure to immobilize the joint above and below the injured bone.
- Move the limb as little as possible.
- Cover all open wounds with a dry sterile dressing before applying the splint.

a. (ATSM, pg 220)

66. Which of the following is not one of the muscles of the rotator cuff?

- Serratus anterior
- Supraspinatus
- Teres minor
- Subscapularis
- Infraspinatus

a. (ATSM, pg 235)

67. Before reducing an anteriorly dislocated shoulder, the axillary nerve should be tested. The best place to test for sensation of the axillary nerve is:

- Over the acromial clavicular of the joint
- Over the lateral shoulder
- Over the postural shoulder
- In the axilla

b. (ATSM, pg 238)

68. Which of the following tests is useful in determining if someone has had an anterior shoulder dislocation?

- Apprehension test
- Sulcus sign
- Yergason test
- Impingement test

a. (ATSM, pg 243)

69. Which of the following dislocations can lead to life threatening respiratory compromise?

- posterior sternal clavicular dislocation
- anterior shoulder dislocation
- posterior shoulder dislocation
- anterior sternal clavicular dislocation

a. (ATSM, pg 244)

70. Which of the following is not true concerning acromio-clavicular joint separations?

- A grade 1 separation involves a small partial tear.
- A second degree tear is when the acromioclavicular ligament is torn but the coraco clavicular ligament remains intact.
- A third degree injury is a result of tearing both of the ligaments.
- Third degree ac joint separations always require surgical fixation.

d. (ATSM, pg 248)

71. Which of the following is not true concerning rotator cuff impingement injuries and tears?

- a. The impingement sign, which is performed by horizontally adducting, flexing, and internally rotating the injured person's arm passively is positive in the rotator cuff impingement syndrome.
- b. Repetitive impingement can produce a cycle of injury which eventually leads to chronic rotator cuff tear.
- c. Testing for the rotator cuff tear can be done in the empty can position.
- d. It is easy to distinguish between a chronic rotator cuff tear and chronic impingement syndrome by examination alone.

d. (ATSM, pg 249)

72. Which of the following is not true concerning chronic rotator cuff tears?

- A traumatic injury such as a deceleration injury while throwing is necessary to sustain a chronic rotator cuff tear.
- Night pain is common in a chronic rotator cuff tear.
- If a rotator cuff tear is small, a prolonged period of rest, with range of motion exercises may allow healing.
- It is possible to sustain pressure rotator cuff tears merely from repetitive overhead activity such as swimming.
  - (ATSM, pg 250)

73. Which of the following is not true concerning biceps tendinitis?

- The biceps performs mostly as a forearm flexor.
- Resistive supination of the forearm aggravates the pain.
- Biceps tendinitis may occur through two mechanisms, both impingement and subluxation of the tendon out of its groove.
- The Yergason test is used to test for instability of the long head of the biceps in its groove.
  - (ATSM, pg 252)

74. Which of the following is not true concerning treatment of biceps tendinitis?

- Steroid injections are useful in treating biceps tendinitis.
- Treating a concurrent impingement syndrome may relieve the biceps tendinitis.
- Strengthening the muscles which assist the biceps may be helpful.
- Treating with conservative therapy including restriction of activity, modalities, and slow resumption of activity often lead to a cure.
  - (ATSM, pg 252)

75. Which of the following is not true concerning shoulder dislocations?

- Posterior dislocations are often associated with seizures.
- The Bankhart lesion is a tear of the glenoid capsule with anterior shoulder dislocations.
- The Hill Sachs lesion is a compression fracture of the articular surface of the humeral head caused by anterior dislocation.
- Injury to the musculocutaneous nerve is common.

d. (ATSM, pg 253)

76. Which of the following is true concerning frozen shoulder also known as adhesive capsulitis?

- Prolonged immobilization of the shoulder may result in the frozen shoulder.
- Treatment of the frozen shoulder is fairly easy and consists of gentle range-of-motion exercises.
- Treatment with non-steroidal anti-inflammatory drugs will result in cure of adhesive capsulitis.
- Pain during the day is extremely common for adhesive capsulitis in its early stage.

a. (ATSM, pg 258)

77. Which of the following is not true concerning olecranon bursitis?

- Erythema of the bursa is a common sign and should not raise suspicion of an infection.
- Olecranon bursitis may occur after multiple small trauma or a single large traumatic event to the elbow.
- Initial treatment of olecranon bursitis includes compression, ice, and anti-inflammatories with possible immobilization with a splint.
- Aspiration using proper sterile technique may be necessary to relieve the bursitis.

a. (ATSM, pg 273)

78. Which of the following is not true concerning lateral epicondylitis or tennis elbow?

- Tennis elbow is most commonly seen in weekend tennis players.
- The pain is intensified by resisting extension of the wrist and fingers, as well as by shaking hands.
- Pressure over the lateral epicondyle is painful.
- Treatment of epicondylitis consists of rest, ice, and anti-inflammatories.
- Injection of corticosteroids into the lesions may be helpful.

a. (ATSM, pp 183-294)

79. Which of the following do not require orthopedic consultation and possibly surgery or casting?

- A third degree sprain of the ulnar collateral ligament on the thumb.
- Human bite overlying a joint in the hand.
- Tuft fracture of the distal phalanx.
- Snuff box tenderness of the wrist following a fall on outstretched hands.

c. (ATSM, pg 300)

80. Which of the following is not true concerning stress fractures of the femur?

- Stress fractures of the shaft of the femur require operative fixation.
- Stress fractures of the femoral neck often require operative fixation.
- Avascular necrosis is a complication of a femoral neck stress fracture.
- Continued activity on a femoral shaft stress fracture may lead to an opened fracture of the femur.

a. (ATSM, pp 314-394)

81. Which is the most likely diagnosis in a patient who complains of an acute knee injury, feeling a pop, seeing an acute joint effusion, and having a positive Lachman and anterior drawer signs on exam.

- Meniscal tear
- Medial collateral ligament strain
- Patellar tendon rupture
- Anterior cruciate ligament rupture

d. (ATSM, pp 314-394)

82. Which is the most likely diagnosis in the following patient? The patient describes a twisting, turning injury. Since the injury, the patient notices locking, clicking, and popping. On physical exam, he has medial joint line tenderness, a positive Apley and McMurray test, and trace effusion.

- Medial meniscal injury
- Medial collateral ligament injury
- Posterior cruciate ligament damage
- osteochondral defect

a. (ATSM, pp 314-394)

83. What is the most likely diagnosis in the following patient? The patient complains that while standing with a locked leg, he was struck from the side causing a stress to his knee. Since then, he has had a mild amount of swelling and tenderness upon the medial joint line. He notes that there is no effusion and has been able to walk with a somewhat stiff leg since the injury.

- Medial meniscal tear
- Medial collateral ligament sprain
- posterior cruciate ligament sprain
- Illio tibial band tendinitis

b. (ATSM, pp 314-394)

84. What is the most likely diagnosis in the following patient? The patient complains that with increased activity he has noted pain in the anterior knee. The pain is worse when going up and down stairs. On physical exam, he has a positive inhibition and compression test and no swelling.

- Medial meniscus tear
- Medial collateral ligament tear
- Patellar tendinitis
- patella femoral syndrome

d. (ATSM, pp 314-394)

85. Which of the following is not true concerning Osgood-Schlatter or tibial epiphysitis?

- Range of motion in the knee is limited in extension.
- Pain is elicited upon palpitation of the tibial epiphysis where the patellar tendon inserts.
- Treatment is symptomatic and includes an aggressive therapy program to increase hamstring flexibility.

a. (ATSM, pp 314-394)

86. Which of the following is not true concerning patellar tendinitis?

- It is also known as leapfrog knee.
- Patellar tendinitis is usually due to overuse syndrome and there is pain running or jumping.
- There is tenderness and swelling on the patellar tendon usually along the upper portion of the tendon near the patella.
- Treatment includes appropriate rest, ice, and non-steroidal anti-inflammatories and may be also helped by a patellar tendon band.

a. (ATSM, pp 314-394)

87. Which of the following is not true concerning osteochondritis dessicans of the knee?

- The clinical presentation usually involves chronic knee pain and swelling with exertion which is poorly localized.
- Sometimes a loose body may occur with the fragmentation of the cartilage and cause locking.
- Definitive diagnosis is made by x-ray and is usually best seen on the tunnel view.
- Casting and even surgery are never necessary for treatment of this defect.

d. (ATSM, pg 373)

88. Which of the following is true concerning compartment syndrome?

- Pain is often out of proportion to the injury sustained.
- Conservative treatment including rest, ice, and anti-inflammatories is sufficient for treatment.
- Nerve damage in compartment syndrome often takes days to present.
- Muscle paralysis may develop, but recovery of muscle function always occurs.

a. (ATSM, pg 400)

89. Which of the following is not used to treat achilles tendinitis?

- Anti-inflammatory medicines
- Steroid injections
- Heel lifts
- Ice
- Rest

b. (ATSM, pg 417)

90. Which of the following is true concerning treatment of achilles tendon ruptures?

- Surgical repair of this injury is an absolute necessity.
- Casting in aquinas for three to four weeks often can result in cures.
- They can be treated with rest, ice, and anti-inflammatories.

b. (ATSM, pg 404)

91. Which of the following statements are not true concerning plantar fascitis?

- Treatment with rest, ice, anti-inflammatories, and arch supports may result in cure.
- X-rays looking for heel spur confirm the diagnosis.
- Steroid injections at the origin of the plantar fascia may provide permanent relief of symptoms.
- The classic history is that, when arising out of bed, the first step in the morning is the most painful and feels like a nail being driven through the bottom of the foot.

b. (ATSM, pg 437)

92. Which of the following is not true concerning heat injuries?

- Heat cramps are a common form of heat injury which involve cramping of the legs, abdominal muscles, or arms and are treated by rest and fluid rehydration.
- Heat exhaustion can be differentiated from heat stroke by the fact that heat exhaustion victims are sweating whereas heat stroke victims are not sweating.
- Heat stroke involves a heat injury with central nervous system compromise.
- The treatment of heat stroke involves cooling of the body, fluid rehydration, and treatment for shock.

b. (ATSM, pg 854)

### **III. CASUALTY MANAGEMENT MODULE**

by

**L.D. NOYES**  
**LCDR, MC, USN**

1. Under normal circumstances, which of the following injuries would take priority and require treatment first?
  - a. a penetrating wound to the chest with difficulty breathing
  - b. an abdominal injury in shock
  - c. a facial gunshot wound with obstructed airway
  - d. a penetrating injury to the brain

c. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)
2. Clinical "shock" is defined as which of the following?
  - a. an abdominal injury with exposed intestines
  - b. a sudden and severe physical or psychological trauma
  - c. inadequate delivery of blood and oxygen to the tissue
  - d. absence of a pulse in an injured extremity

c. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)
3. Which of the following spinal cord levels are responsible for controlling breathing?
  - a. cervical levels C1, C2
  - b. cervical levels C3, C4, C5
  - c. cervical levels C6, C7
  - d. thoracic levels T3, T4, T5

b. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)
4. Which of the following measures are useful in maintaining an airway?
  - a. a nasal trumpet (tube from nose to pharynx)
  - b. the chin lift/jaw thrust
  - c. an endotracheal tube
  - d. all of the above

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

5. The correct treatment for a patient in shock with a suspected tension pneumothorax is which of the following?

- immediate medevac to a surgical facility
- mouth-to-mouth buddy breathing
- needle decompression of the injured side of the chest
- immediate infusion of two liters of ringer's lactate

c. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

6. Which of the following signs and symptoms would suggest the presence of a tension pneumothorax in a patient with multiple fragment wounds to the chest?

- [Air visibly rushing in and out of the wound]
- shortness of breath, shock, and no breath sounds on the injured side
- a large amount of blood coming from the wound
- all of the above

b. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

7. Which of the following thoracic injuries are not immediately life threatening?

- a massive open pneumothorax
- a massive hemothorax
- a tension pneumothorax
- a simple closed pneumothorax

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

8. Which of the following are important in determining the cardiac output (amount of blood the heart pumps.)?

- heart rate
- preload to the heart
- afterload from the heart
- all of the above

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

9. Which of the following organs does the body make the most attempt to preserve blood flow to?

- the heart
- the lungs
- the brain
- the kidneys

c. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

10. Which of the following signs are suggestive of shock?

- a rapid heartbeat despite two liters of IV fluids
- cold and clammy skin
- a faint femoral pulse
- all of the above

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

11. The best initial choice of fluids to give a patient in shock is which of the following?

- plasma
- Ringer's lactate
- normal saline
- dextrose 5% in water

b. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

12. In a field hospital setting, the most desirable choice of fluid to give a patient who has lost a lot of blood and is still in shock after an initial fluid bolus is:

- Ringer's lactate
- plasma
- blood
- albumin

c. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

13. All of the following are acceptable methods of controlling bleeding in an injured extremity except which?

- direct pressure on the wound
- compression of pressure points
- placement of a tourniquet on an amputation
- probing the wound to place hemostats on bleeding vessels

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

14. The important difference between massive bleeding in an extremity and in the chest or abdomen in which of the following?

- bleeding in the abdomen requires surgery to control
- massive bleeding in the chest is likely to be lethal
- a tourniquet can be placed on an extremity
- all of the above

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

15. Which of the following larger arteries are not effectively used as pressure points?

- femoral arteries
- axillary arteries
- radial arteries
- subclavian arteries

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

16. Which of the following injuries would carry the highest medevac priority?

- a closed fracture of the humerus
- an open tib/fib fracture
- a femur fracture with no pulses below the groin
- an amputation of the hand

c. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

17. The most likely cause of "late" death (days to weeks following injury) in battlefield injuries is which of the following complications.

- delayed bleeding
- infection
- stroke
- tension pneumothorax

b. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

18. The most likely wounds to become infected after injury are:

- head and neck wounds
- chest and mediastinum wounds
- abdominal wounds with intestinal injuries
- abdominal wounds without intestinal injuries

c. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

19. The most likely source of bacteria in an infected abdominal wound postoperatively is which of the following?

- bacteria on the bullet
- bacteria on dirt introduced through the wound
- bacteria normally present within the intestines
- bacteria in the hospital at the time of surgery

c. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

20. When doing a quick neurological exam on an injured patient, which of the following are used?

- level of consciousness
- pupil size, equality, and reactivity
- movement of all four extremities
- all of the above

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

21. When discussing an injured patient's level of consciousness with other medical personnel, which of the following terms should be used?

- obtunded
- lethargic
- comatose
- none of the above

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

22. A patient with multiple fragment wounds who is conscious, breathing, but cannot move his arms or legs probably has a significant injury to which of the following?

- his brain (cerebrum or cerebellum)
- his brain stem
- his spinal cord below level C5
- his peripheral nerves

c. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

23. The Glasgow Coma Scale, a very useful tool to describe the clinical severity of brain injuries, takes into account which of the following?

- best verbal response
- best motor response
- eye opening
- all of the above

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

24. A patient with multiple fragment wounds who is conscious, breathing, has normal vital signs, but is unable to move or feel his right arm probably has an injury to which of the following?

- his brain (cerebrum or cerebellum)
- his brain stem
- his spinal cord
- his peripheral nerves

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

25. With regard to bleeding within the skull, which of the following can be seen following injury?

- subdural hematoma
- epidural hematoma
- intracerebral hematoma
- all of the above

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

26. Initial treatment in the field for those patients with significant head injuries that are considered potentially salvageable consists of which of the following?

- elevating the patient's upper body and head
- keeping the neck straight and not twisted to the side
- hyperventilation (overbreathing)
- all of the above

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

27. A patient with multiple injuries to the head and trunk is found to be in shock. Which of the following statements are true?

- His shock is probably due to his head injury.
- IV fluids should not be given so as to avoid worsening the brain swelling.
- Treating the shock will only make the head injury worse.
- None of the above are true.

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

28. Dressing of a head wound with exposed brain in a patient considered potentially salvageable should consist of which of the following?

- nothing
- a clean dry bandage
- a moistened bandage
- a tight ace wrap compression dressing

c. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

29. The primary concern when dealing with large scalp wounds that do not penetrate the skull is which of the following?

- Scalp wounds often become infected.
- Scalp wounds often scar severely.
- Scalp wounds can bleed a large amount unless sutured.
- all of the above

c. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

30. Initial treatment of major penetrating eye injuries in the field consists of which of the following?

- dressing with a rigid non-compressive bandage
- dressing with a soft compressive bandage
- forcefully irrigating the eye with normal saline
- applying antibiotic ointment

a. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

31. Treatment of a corneal abrasion should only be performed by a corpsman in the field after which of the following have been done?

- making sure that the globe has not been penetrated
- making sure that no foreign objects remain on the cornea
- making sure that visual acuity is grossly intact
- all of the above

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

32. Ideal treatment of corneal abrasions in the field consists of which of the following?

- confirmation of the abrasion with fluorescent and UV light
- application of antibiotic ointment or drops
- application of a soft, compressive dressing
- all of the above

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

33. When examining the injured eye, which of the following clinical tests are most important?

- visual acuity
- visual fields
- color perception
- extraocular movements

a. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

34. In a patient with blunt trauma to the head and red blood coming from his ear canal, which of the following are true?

- The bleeding may be due only to trauma to the ear.
- The bleeding may be due to a fracture of the base of the skull.
- A positive "two ring" halo sign suggests a skull fracture.
- all of the above

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

35. In an unconscious patient lying on his back, which of the following are most likely to cause an airway obstruction?

- his tongue
- vomit
- blood
- broken teeth

a. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

36. When first approaching an unconscious patient who appears to not be breathing, the first choice in helping establish an airway is to do which of the following?

- Immediately intubate the patient.
- Immediately perform a cricothyroidotomy.
- Immediately perform a chin lift, jaw thrust maneuver.
- None of the above, as he is probably dead.

c. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

37. Which of the following statements is true regarding acute airway obstruction?

- It is better to intubate orally than do a cricothyroidotomy.
- An oral airway (the rigid curved plastic tube) is best for a conscious, alert patient.
- A nasal trumpet (the flexible rubber tube) can only be used in an unconscious patient.
- All of the above are true.

a. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

38. The most important problem with facial wounds is which of the following?

- They cause severe scarring and psychological problems later.
- They can very easily become infected.
- Blood and swelling tissue can interfere with breathing.
- Broken teeth can be inhaled into the lungs.

c. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

39. Facial or neck wounds producing massive bleeding from the mouth that do not stop bleeding with direct pressure to the outside of the face can be a difficult problem. Which of the following is true regarding these wounds?

- Bimanual pressure with a hand or fingers in the mouth and a hand outside may help control the bleeding.
- Tightly packing the inside of the mouth with gauze may help.
- Securing an airway with an endotracheal tube is of great importance.
- All of the above are true.

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

40. Which of the following statements are true regarding mouth-to-mouth resuscitation (buddy-breathing)?

- It can be very tiring to the breather over time.
- It nearly completely occupies the efforts of the breather.
- It must be continued until the patient breathes on his own or a more secure airway is established.
- All of the above are true.

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

41. A head-injured patient who stops breathing on his own has probably stopped breathing because of which of the following?

- His central drive to breathe has been damaged.
- His airway has become blocked.
- His head injury has caused a state of circulatory shock.
- Answers (a) and (b) might both be correct.

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

42. Which of the following causes of acute airway obstruction would probably not be helped by placing a surgical cricothyroidotomy?

- a bullet wound through the tongue with massive swelling
- a mandible fracture in an unconscious patient
- multiple facial fragment wounds with massive bleeding from the mouth
- a tracheal gunshot wound at the sternal notch

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

43. With regard to establishing an airway with an endotracheal tube, which of the following statements are true?

- An endotracheal tube can only be placed orally, rather than nasally.
- An endotracheal tube cannot be placed through a cricothyroidotomy incision.
- Mouth-to-tube breathing can be done.
- Control of the cervical spine is considered necessary on the battlefield when intubating.

c. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

44. Patients with wounds to the neck on the battlefield can be extremely difficult to manage because of which of the following?

- Airway obstruction can easily occur.
- Bleeding can be difficult to control.
- Cutting a cricothyroidotomy may cause further bleeding.
- all of the above

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

45. When dealing with neck wounds that injure the cervical esophagus, which of the following statements are true?

- When wounded, the esophagus bleeds massively.
- The injured esophagus can easily obstruct the airway.
- The injured esophagus can cause massive infection later.
- None of the above are true.

c. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

46. The best way to control massive bleeding coming from a small neck wound is to do which of the following?

- applying a tourniquet loosely about the neck
- probing the wound with a hemostat to clamp the bleeders
- placing a single finger into the wound and applying pressure
- pressure point compression of the carotid artery at the base of the neck

c. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

47. The major source of venous bleeding from within the neck comes from which of the following?

- the carotid veins
- the facial veins
- the thyroid veins
- the jugular veins

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

48. Which of the following are potential complications from placing a surgical cricothyroidotomy?

- causing major bleeding
- misplacing the tube in the surrounding soft tissue, not in the trachea
- injuring the cervical esophagus
- all of the above

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

49. Which structure marks the site through which you make a cricothyroidotomy incision?

- a. trachea
- b. thyroid cartilage
- c. cricothyroid cartilage
- d. cricothyroid membrane

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

50. Which of the following would lead you to suspect a tension pneumothorax instead of a simple pneumothorax in a patient with a penetrating wound to the chest?

- a. absence of breath sounds on the injured side
- b. difficulty breathing
- c. bleeding from the wound
- d. the presence of shock

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

51. When initially approaching an injured patient, a good voice reply confirms an intact airway, but which of the following statements are also true?

- a. This also confirms that neither lung is damaged.
- b. This guarantees that he will have no further airway problems.
- c. You should still listen for breath sounds over each lung.
- d. You should suspect that his brain is not getting enough oxygenated blood.

c. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

52. When placing a needle thoracentesis or a chest tube, you should avoid the intercostal blood vessels by placing the needle or tube in which of the following locations?

- a. over the top of the lower rib
- b. under the bottom of the upper rib
- c. through the cartilage of the rib
- d. through the sternum

a. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

53. When dealing with penetrating wounds of the chest, a patient in shock might have which of the following as the reason for his shock?

- a massive bleeding into his chest
- a tension pneumothorax
- penetration through the diaphragm with internal bleeding in the abdomen
- All of the above are true.

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

54. Of all patients with injuries to the thorax, which of the following statements is true?

- Most patients will need only a chest tube as final treatment.
- Most patients will need chest surgery (a thoracotomy.)
- All patients with bullets remaining in the chest will need surgery to remove the bullet.
- all of the above

a. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

55. Which of the following might be complications of inserting a chest tube?

- injury to the heart
- injury to the lung
- injury to the intercostal vessels
- all of the above

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

56. Regarding bleeding into the chest, which of the following statements are true?

- A patient can lose his entire blood volume into one side of his chest.
- Most of the lost blood would be found within the tissue of the lung.
- A needle thoracentesis is performed to evacuate this blood.
- All of the above are true.

a. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

57. The reason a Heimlich valve is placed on the end of a chest tube after insertion is which of the following?

- to help remove blood from the chest
- to help remove air from the chest
- to prevent air from re-entering the chest
- all of the above

c. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

58. A patient receives a single gunshot wound to the left side of his chest with an exit at the umbilicus. A chest tube is inserted, which evacuates around 200 cc's of blood, and the patient is medevac'd to a field hospital. Which of the following statements is true?

- He will definitely need surgery on his chest.
- He will definitely need surgery on his abdomen.
- Both (a) and (b) are true.
- Neither (a) nor (b) are true.

b. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

59. A patient with a gunshot wound to the chest has been medevac'd to the field hospital where he is found to be in shock despite placement of a chest tube and infusion of two liters of IV fluids.

Which of the following is true?

- If blood is not available, you should avoid giving more IV fluids for fear of causing pulmonary edema in the injured lung.
- If available, you should now transfuse blood.
- He cannot be bleeding in his abdomen.
- None of the above are true.

b. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

60. When dealing with a patient in the field who has a penetrating abdominal wound, which of the following is true?

- If the patient is in shock, there is little you can do to treat it besides shock position and IV fluids.
- Eviscerating wounds should be covered with a moist dressing.
- If medevac was delayed, you might consider administering IV antibiotics if they were available.
- All of the above are true.

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

61. Which of the following is true with regard to penetrating abdominal wounds?

- All patients with abdominal wounds will need surgery.
- Bullets and shell fragments must be removed from the abdomen.
- Medevac of patients with abdominal wounds can be safely delayed for up to twelve hours.
- None of the above are true.

a. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

62. Which of the following statements are true?

- Penetrating wounds to the lower back and flank should be treated as wounds to the abdomen.
- A penetrating wound to the chest with exit from the abdominal wall should be treated as a wound to the abdomen as well as chest.
- Upon arrival to a field hospital, presence of metal fragments in the abdomen on X-ray requires an abdominal operation.
- All of the above are true.

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

63. Which of the following abdominal organ injuries might be expected to be lethal in the field despite your most aggressive treatment?

- an injury to the internal iliac artery
- an injury to the spleen
- an injury to the colon
- an injury to the small intestine

a. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

64. A delay of greater than six hours in medevac should be expected to cause the greatest amount of the future complications in a patient with an injury to which of the following abdominal organs?

- an injury to the stomach
- an injury to the colon
- an injury to the small intestine
- an injury to the abdominal portion of the esophagus

b. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

65. In a patient with multiple small fragment wounds to his thorax, which of the following would be a good indication that there was significant abdominal injury?

- blood from the rectum
- blood from the vagina in a female patient
- blood in a clean voided specimen of urine
- all of the above

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

66. Most patients with penetrating injuries to both the abdomen and the chest who arrive alive to a field surgical hospital will need which of the following?

- an abdominal operation and a chest tube(s)
- an abdominal operation and a thoracic operation
- an abdominal operation only
- a thoracic operation only

a. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

67. Which of the following statements are true?

- Penetrating injuries to the genitals may have caused intra-abdominal injuries.
- Penetrating injuries to the buttocks may have caused intra-abdominal injuries.
- Penetrating injuries to the chest may have caused intra-abdominal injuries.
- All of the above are true.

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

68. Learning how to care for injured extremities on the battlefield is important for which of the following reasons?

- Statistically, extremity wounds are far more common than wounds to the head, neck or trunk (chest and abdomen.)
- Patients with extremity wounds are far more likely to be returned to duty than those with head, neck, or trunk wounds, thus able to conserve the fighting strength.
- Patients with extremity wounds are far more likely to arrive alive at a surgical facility than those with head, neck, or trunk wounds.
- All of the above are true.

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

69. Which of the following would you consider to be wounds likely to be seen on the battlefield?

- an open, comminuted fracture
- a complete amputation
- massive soft tissue (skin and muscle) loss
- all of the above

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

70. Which of the following would carry the highest triage priority and be medvac'd first?

- a closed femur fracture with no pulses below the groin
- an open tibia/fibula fracture
- a complete foreleg amputation with a tourniquet applied
- massive tissue damage to the forearm with bleeding controlled

a. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

71. Which of the following statements are true regarding extremity injuries on the battlefield?

- Upper extremity injuries are more common than lower extremity injuries.
- Injuries to a nerve in an extremity must be treated immediately or loss of function will result.
- A penetrating wound to an extremity which fractures the bone should be considered an open fracture regardless of whether or not there is exposed bone.
- All of the above are true.

c. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

72. When dealing with an injured extremity that is fractured, a splint is often applied. Which of the following are reasons to apply a splint?

- decreases patient discomfort
- decreases bleeding within the soft tissue around the fracture
- decreases the likelihood of injury to surrounding nerves and blood vessels
- all of the above

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

73. In an injured extremity whose arterial blood supply has been interrupted. Approximately how long can restoration of blood supply be delayed before gangrene (death of the extremity) will probably result?

- one hour
- six hours
- twelve hours
- twenty-four hours

b. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

74. Which of the following statements are not true regarding treatment of open fractures in the field?

- The fracture should be reduced, placing the exposed bone beneath the skin.
- The wound should be dressed with a clean, bulky dressing.
- If available, IV antibiotics should be given.
- A field-expedient splint should be applied.

a. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

75. When presented with a swollen extremity fracture with no palpable pulse distal to the injury and cool, pale digits, which of the following statements are not correct?

- The fracture should be gently manipulated while splinting to see if the pulse returns.
- IV fluids should be given to treat for possible shock.
- A loose, bulky dressing should be applied to any wounds.
- Heat should be applied to the cool digits.

d. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

76. Which of the following statements regarding traumatic amputations is correct?

- A tourniquet should be placed as the first measure to control the bleeding.
- The wound should not be bandaged, but left open.
- The patient should be an immediate triage priority.
- None of the above are correct.

a. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

77. Which of the following would probably be the most likely cause of delayed complications in an open extremity fracture?

- infection
- bleeding
- pain
- nerve injury

a. (L.D. Noyes, LCDR, MC, USN, SPECWAR GROUP ONE MEDICAL)

<b>REPORT DOCUMENTATION PAGE</b>		<i>Form Approved OMB No. 0704-0188</i>	
<p>Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.</p>			
1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE MARCH 1994	3. REPORT TYPE AND DATE COVERED FINAL MARCH 93-JANUARY 94	
4. TITLE AND SUBTITLE NAVAL SPECIAL WARFARE COMPUTER-AIDED CORPSMAN TRAINING PROGRAM (VERSION 1.0)-MULTIPLE CHOICE ITEMS		5. FUNDING NUMBERS Program Element: REIMB Work Unit Number: 06507N407BB.001-6307	
6. AUTHOR(S) L. A. HERMANSEN, F. K. BUTLER, S. FLINN, AND L. D. NOYES		8. PERFORMING ORGANIZATION Technical Document 94-3C	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Health Research Center P. O. Box 85122 San Diego, CA 92186-5122		10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Naval Medical Research and Development Command National Naval Medical Center Building 1, Tower 2 Bethesda, MD 20889-5044		11. SUPPLEMENTARY NOTES	
12a. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.		12b. DISTRIBUTION CODE	
<p>13. ABSTRACT (Maximum 200 words)</p> <p>This document contains all of the question and answer items from the first edition of the Computer-Aided Corpsman Training Program (CACTP). The items were developed by U.S. Navy physicians with expertise in each of the following three subject areas: (1) Diving Medicine, (2) Exercise Injuries, and (3) Casualty Management. The questions were designed to cover major components of the subject areas described and to reflect the special knowledge required of Naval Special Warfare (NSW) corpsmen due to the unique environment in which they operate.</p>			
14. SUBJECT TERMS Diving Medicine Exercise injuries		15. NUMBER OF PAGES	
		16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT Unlimited